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Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin, NJ 08830

EXAMINER

KIM, EDWARD J

ART UNIT	PAPER NUMBER
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2455

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11/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/510,225	Applicant(s) PAVLIK ET AL.	
	Examiner EDWARD J. KIM	Art Unit 2455	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. This office action is in response to the Amendment filed on 08/28/2008.
2. Claims 30-39 are presented for examination.

Response to Amendment

3. The Examiner respectfully disagrees with the Applicant and maintains the rejection.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 30-3, 35, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Kuchlin et al. ("HIGHROBOT: Telerobotics in the Internet", Copyright 1997), hereinafter referred to as Kuchlin.

Kuchlin discloses, a robot control system which also serves as a web server.

Regarding claim 30, Kuchlin discloses, a web server with integrated industrial automation functionality comprising: a real-time operating system installed on a web server computer (Kuchlin, section 1, section 2, section 3.2, section 4. Kuchlin discloses real-time operating systems installed.);

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a web server software system installed on the web server computer (Kuchlin, Section 1, Section 2, Section 3.2, Section 4, Section 4.1. Kuchlin discloses a web server carrying out web server functionalities as well as industrial automation functionalities.);

the web server software system comprising a web server kernel and a plurality of interface-compatible software expansion modules installed on the web server kernel via a common interface protocol between each of the expansion modules and the web server kernel, wherein the common interface protocol is standardized for the software expansion modules such that the software expansion modules are integrated with, and part of, the web server software system (Kuchlin, Section 3.2, Section 4.1, Section 4.2, Section 4.3. Kuchlin discloses that the system is implemented on a common interface protocol, the Internet protocol.), and are loaded, configured, started, and terminated directly by the web server (Kuchlin, Section 4.2, 4.2.2, 4.2.4, 5. Kuchlin discloses that software modules easily integrated to the server.);

a first one of the expansion modules providing server/client network communication (Kuchlin, Section 4.2.2, Section 4.2.4);

a second one of the expansion modules providing real-time process control of at least one hardware component of an industrial automation system (Kuchlin, section 2, section 4. Kuchlin discloses real-time operating systems installed.);

and the second expansion module interfaced to the real-time operating system; wherein a network client of the web server software system can monitor and control over the network communication the industrial hardware component via the web server software system (Kuchlin, Section 4.2.2, Section 4.2.4).

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Regarding claim 31, Kuchlin disclosed the limitations, as described in claim 30, and further discloses a web server, wherein the common interface protocol comprises an Internet protocol that provides communication between the expansion modules as well as communication with the client; and wherein communication between the kernel and the expansion modules is standardized on the Internet protocol; whereby integration of the expansion modules, including the industrial automation expansion module, into the web server software system is facilitated by the Internet protocol as a universal protocol (Kuchlin, section 3.1, section 3.2, section 4.1, section 4.2, section 4.3. Kuchlin discloses that the system is implemented on various common interface protocols (refer to section 3.2.2 Standard computer networks), such as, the Internet protocol, MAP (refer to section 3.1), which is used for communication in the system.).

Regarding claim 32, Kuchlin disclosed the limitations, as described in claim 31, and further discloses, a web server of claim 31, wherein the internet protocol comprises TCP/IP (Kuchlin, section 3.2).

Regarding claim 33, Kuchlin disclosed the limitations, as described in claim 31, and further discloses a web server wherein the internet protocol comprises HTTP and/or FTP (Kuchlin, section 4.1).

Regarding claim 35, Kuchlin disclosed the limitations, as described in claim 30, and further discloses, wherein the common interface protocol is an Application Programming Interface (API) (Kuchlin, Abstract, Section 2, 4.2, 4.2.2, 4.2.4, 5. It is inherent that common interface protocol such as API is utilized, as “API is a formally defined interface via which application programs can use system services (network, operating system, etc.) or services of other application programs” – refer to Applicants’ pg.10 ln.8-17. Kuchlin discloses industrial

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automation objects (software) directly integrated in the server, and the use of object-oriented paradigm, programmed in C++ and JAVA, which utilizes the system services.).

Regarding claim 37, Kuchlin disclosed the limitations, as described in claim 30, and further discloses, wherein the common interface protocol comprises Common Gateway Interface (CGI) (Kuchlin, Abstract, Section 2, 4.2, 4.2.2, 4.2.4, 5. It is inherent that common interface protocol such as CGI is utilized. “CGI is a standard protocol for interfacing application software with a web server” – refer to Applicants’ pg.10 ln.8-17. Kuchlin discloses industrial automation objects (software) directly integrated in the server, programmed in C++ and JAVA, utilizing network interfaces.)

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 34, 36, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuchlin et al.(), hereinafter referred to as Kuchlin, in view of Soergel et al. (US Patent #6,529,780 B1), hereinafter referred to as Soergel, in further view of Rathjen et al. (US Publication #2004/0015383 A1), hereinafter referred to as Rathjen.

Regarding claim 34, Kuchlin discloses the limitations, as described in claim 31, and further discloses a web server wherein the plurality of software expansion modules comprises a web page server (55) (Kuchlin, Section 1, Section 2, Section 3.2, Section 4, Section 4.1. Kuchlin

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discloses the use of web server and web browser in the invention.), an industrial field bus access (57) (Kuchlin, fig.1, section 1, section 2, section 3.1, section 3.2. Kuchlin discloses field-bus in the system), a JAVA processor (59) (Kuchlin, Abstract, section 1, section 3.2.4 Internet technology, section 4, section 4.1. Kuchlin discloses Java-applets and Java technology used in the system.), however fails to explicitly disclose the use of an XML parser, XML processor and a webcam.

Soergel discloses a method for automatic operation of industrial plants, and further discloses, a webcam processor (Soergel, Abstract, col.3 ln.45-46. Soergel discloses the use of camera in an industrial automation system on a network such as the Internet.). It would have been obvious to one of ordinary skill in the art to modify the teachings of Kuchlin with those of Soergel to include webcam and a processor for processing data from the webcam. One would have been motivated to do so for monitoring purposes.

Rathjen discloses, a method, device and system for collecting, visualizing and/or modifying operating data of at least one machine pertaining to the tobacco processing industry. Rathjen further discloses, the use of an XML parser (56), and an XML processor (64) (Rathjen, paragraph [0008]. Rathjen discloses the use of XML web authoring language). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Kuchlin with those of Rathjen to utilize XML language. One would have been motivated to do so, as it was known in the art that XML is a standard way of structuring data (syntax), which allows the user to define own proprietary data syntax then build own proprietary tools with ease.

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Regarding claim 36, Kuchlin disclosed the limitations, as described in claim 34, and further discloses, wherein the common interface protocol is an Application Programming Interface (API) (Kuchlin, Abstract, Section 2, 4.2, 4.2.2, 4.2.4, 5. It is inherent that common interface protocol such as API is utilized, as “API is a formally defined interface via which application programs can use system services (network, operating system, etc.) or services of other application programs” – refer to Applicants’ pg.10 ln.8-17. Kuchlin discloses industrial automation objects (software) directly integrated in the server, and the use of object-oriented paradigm, programmed in C++ and JAVA, which utilizes the system services.).

Regarding claim 38, Kuchlin disclosed the limitations, as described in claim 34, and further discloses, wherein the common interface protocol comprises Common Gateway Interface CGI) (Kuchlin, Abstract, Section 2, 4.2, 4.2.2, 4.2.4, 5. It is inherent that common interface protocol such as CGI is utilized. “CGI” is a standard protocol for interfacing application software with a web server” – refer to Applicants’ pg.10 ln.8-17. Kuchlin discloses industrial automation objects (software) directly integrated in the server, programmed in C++ and JAVA, utilizing network interfaces.).

8. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuchlin et al. (“HIGHROBOT: Telerobotics in the Internet”, Copyright 1997), hereinafter referred to as Kuchlin, in view of Swales (US Patent #6,321,272 B1).

Regarding claim 39, Kuchlin disclosed the limitations, as described in claim 30, however, fails to *explicitly* disclose a web server further comprising a non-real-time operating system.

Swales discloses an interface that allows for transfer of real time control data on a general purpose network and an industrial control system. Swales further discloses, further comprising a

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non-real-time operating system installed on the web server computer, wherein the web server kernel is installed on the non-real-time operating system, and the second expansion module comprise both a process connection to the hardware component of the industrial automation system and a connection to an interface of the real-time operating system (Swales, Abstract, fig.1, fig.2, fig.3, col.2 ln.40-60).

Response to Arguments

9. Applicant's arguments filed on 08/28/2008, have been fully considered but they are not persuasive.

10. The Applicant argues,

“The industrial automation module of Kuchlin, called “HighRobot”, is installed on the operating system...HighRobot is not installed on the web server. If fact it is the other way around – the web server is installed on HighRobot...This is the opposite of Applicant's configuration as claimed and shown, in which an industrial control module...is installed on a web server...” (refer to the second paragraph pg.2 of Amendment filed on 08/28/2008)

The Examiner respectfully disagrees.

In the art of computer networks, web server refers to a computer program that accepts and responds to HTTP request from web clients, or a computer that runs the web server program as defined above. The HIGHROBOT is an open workstation based robot control which has full access to the Internet and its Web-technologies (Kuchlin, Abstract). The system “is based on an application independent general server which enables Web-based distributed object computing” (Kuchlin, section 1.Introduction).

The Examiner has previously stated, “ “CGI” is a standard protocol for interfacing application software with a web server” – refer to Applicants’ pg.10 ln.8-17. Kuchlin discloses

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industrial automation objects directly integrated in the server (Section 4.2, 4.2.2, 4.2.4, 5), and the use of object-oriented paradigm, programmed in C++ and JAVA, which utilizes the system services and network interfaces. Therefore, it is inherent and obvious that *the software modules are installed in the server as interface-compatible extension of a web server.*” Refer to sections 4.2, 4.2.2, 4.2.4, and 5, where Kuchlin discloses the system as being a general server, wherein control objects, such as Robot object and PLC objects, can be expanded upon. For example, Kuchlin discloses, “This makes the general server very flexible and easy to extend with new server object functionality.” (refer to last paragraph of section 4.2) and “The general server can be extended easily with new server functionality and results due to its highly reusable code design...” (refer to second to last paragraph of section 5). Therefore, Kuchlin anticipates the automation functionalities to be expansion objects/modules of the web server.

Also, the HIGHROBOT utilizes APIs and CGIs to communicate between the web server and the automation software modules. Therefore, when a remote client accesses the control functions via the Internet, the request will be accepted by the web server, and the web server will load, configure, start, and terminate the automation software modules accordingly.

The Applicant further argues,

“Applicant’s industrial automation module is integrated directly into the web server as an expansion module. It does not run directly on the operating system.” (refer to last paragraph of pg.2 of the Amendment filed on 08/28/2008)

The Examiner respectfully disagrees.

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The above is not supported by the claim language. Claim 30 reads “the web server software system comprising a web server kernel and a plurality of interface-compatible software expansion modules installed on the web server kernel via a common interface protocol between each of the expansion modules and the web server kernel”. It is further disclosed in the spec that APIs and CGIs are utilized for providing the interface, which is the case in Kuchlin (refer to previous Office Action).

When a user accesses and controls the industrial automation system from a remote site, the user is connected to the automation control modules via the web server module, which then loads and executes the automation control modules, which are therefore expansion modules of the web server modules. Also refer to the above explanations to the previous argument.

The Applicant argues,

“Regarding claim 39, Swales never mentions an operating system with a real-time portion and a non-real-time portion”.

The Examiner respectfully disagrees.

It is widely known in the art, that computer network systems include both real-time and non-real-time operations. For example, web servers have real-time streaming and non-real-time data transfer capabilities. Kuchlin discloses monitoring and streaming in real-time the operations, which allows the user to monitor and control the automation devices in real-time. Also Kuchlin discloses typical web server functionalities, such as accessing the internet, which includes non-real-time processes. Most computer devices have the capability of both real-time and non-real-time processing. As explained above Kuchlin discloses the system to be on a

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general server which can be extended with other server functionalities and also which is capable of *controlling industrial automation devices* (as the HIGHROBOT system does) via extensions, which furthermore is implemented on a *standard computer system* (section 3.2).

Swales was further referenced by the Examiner as an additional example of the real-time and non-real-time operations in a web-enabled industrial control system, wherein industrial automation control system is extended to a web server module via an interface, which is disclosed as the backplane between the web server module and the PLC.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDWARD J. KIM whose telephone number is (571)270-3228. The examiner can normally be reached on Monday - Friday 7:30am - 5:00pm EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on (571) 272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Edward J Kim/
Examiner, Art Unit 2455

/saleh najjar/
Supervisory Patent Examiner, Art Unit 2455